ECON 5990-103: Special Studies: Economics of Energy

Course Description:
This course covers the topics related to the economic analysis of the U.S. and international energy industry and energy policy issues. Specific topics will include introductions to energy information and data, energy demand and supply analyses, various energy sectors, energy market structures, energy pricing, and energy policy in the domestic and international contexts. We will specifically investigate the topics in the international oil markets and OPEC, the U.S. natural gas markets, Japan and the Asia-Pacific LNG market, and the European energy markets. Various other topics such as energy risk management, energy regulation, and energy security may be covered as well.

Class Dates, Location and Hours:
Dates: October 19 – 21 & 26 – 28, 2018
Location: 3281 NW Koehler Loop, Fort Sill, Oklahoma.
Hours: Friday 5:30-9:00 p.m., Saturday 9:00 a.m.-5:00 p.m.; Sunday 12:00-4:00 p.m.
Last day to enroll or drop without penalty: September 20, 2018

Site Director:
Email: apftsill@ou.edu. Phone: (580) 355-1974.

Professor Contact Information:
Course Professor: Zhen Zhu, Ph.D.
Mailing Address: 4105 Gloucester Lane
Norman, OK 73072
Telephone Number: 405-919-5304
E-mail Address: zzhu@uco.edu
Professor availability: The professor will be available via email to students before and after the class sessions. On-site office hours are half an hour before and after each class session, by appointment.

Textbook(s) and Instructional Materials:
Student materials are available at the OU Follett Bookstore located at 1185 Asp Avenue; Norman, OK, and can be ordered online, by phone, by email, or by fax. Ordering online at http://www.bksir.com/oklahomastore/home is strongly recommended – students can track the status of their order within 48 hours. If an order has not been shipped within three days, students can contact the Follett textbook manager by phone (405) 325-3511, (800) 522-0772 (toll-free) or email 0831mgr@fheg.follett.com. Phone orders (ask for the textbook manager and identify yourself as an Advanced Programs student) can be placed 8 a.m. to 6 p.m. Monday through Thursday; 8 a.m. to 5 p.m. on Friday; 10 a.m. to 4 p.m. on Saturday (CST). Summer hours: 9 a.m. to 5 p.m. Monday through Friday (CST). Fax orders can be placed 24 hours a day at (405) 325-7770. Text prices are available online.


Note: Follett is the Advanced Programs contractual textbook provider. Should text changes become necessary after publication of the course syllabus, Advanced Programs will facilitate text returns/refunds only for texts purchased through Follett.

**Course Objectives:**

The course provides an introduction to the U.S. and international energy industry and more in-depth analysis of the fundamental energy economic issues faced by today’s world energy industries especially the oil and gas industries. At the end of the class, students will be able to:

- identify the sources of international energy data
- understand the basics of international energy markets and their structures
- perform fundamental economic analysis of energy supply and demand, and their prices
- understand the rationales behind the domestic and international energy policies

**Course Outline:**

1. Energy demand analysis
   a. Energy data and information
   b. Understanding and analyzing energy demand
   c. Energy demand management

2. Energy supply analysis
   a. Energy investment
   b. Fossil fuel supply economic analysis
   c. Electricity supply analysis
   d. Renewable and alternative energy supply

3. Oil market and international oil market issues
   a. Oil market basics
   b. International oil market introduction
   c. Historical perspectives
   d. OPEC
   e. Future of oil
   f. Some additional issues
   g. Alternatives to oil

4. Natural gas market issues
   a. Gas supply
   b. End users and the physical system
   c. Gas system operations, market participants
   d. Service options
   e. Gas market regulation and deregulation
   f. Market dynamics
   g. Cost of capital for utilities

5. Electricity markets
   a. Electricity basics
   b. Modeling the markets
   c. Natural monopoly and government policy
   d. Rate of return regulation and utility rate cases

6. Perfect competition and the coal industry
   a. Introduction
   b. Perfect competition
c. Demand and supply
d. pricing

7. Introduction to Japan and Asia-Pacific LNG Market
   a. LNG production and trade
   b. LNG monopsony on input market, competitor on output market
   c. Modeling of prices
   d. Bargaining and negotiation

8. Introduction to the European energy markets
   a. Coal and oil consumption
   b. Coal and oil production
   c. Natural gas markets
   d. Primary electricity
   e. European market structure
   f. Pricing models for European energy markets

9. Other possible topics
   a. Energy risk management
   b. Energy securities
   c. Environmental issues related to energy
   d. Effect of high energy prices
   e. Energy consumption and economic growth

Readings:
Students should read broadly on energy and international energy related topics before the beginning of the class.

Final Examination
A two-hour in-class closed-book examination will be given the last day of class.

Post Seminar Assignment:
Students will be required to write a term paper on any International Energy/Energy Economics related topic with the permission of the course professor. The term paper must be at least 15 pages in length with appropriate citation, etc. Due Date: November 11, 2018

Grading:
This is a letter-graded course: A, B, C, D, or F. Students will be evaluated on the basis of the following criteria:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percent of Grade</th>
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<tbody>
<tr>
<td>Final Exam</td>
<td>70%</td>
</tr>
<tr>
<td>Post Seminar Assignment</td>
<td>30%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
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</tbody>
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Notice: Failure to meet assignment due dates could result in a grade of I (Incomplete) and may adversely impact Tuition Assistance and/or Financial Aid.
POLICIES AND NOTICES

Attendance/Grade Policy

Attendance and participation in interaction, individual assignments, group exercises, simulations, role playing, etc. are valuable aspects of any course because much of the learning comes from discussions in class with other students. It is expected that you attend all classes and be on time except for excused emergencies.

Excused absences are given for professor mandated activities or legally required activities such as emergencies or military assignments. It is the policy of the University to excuse absences of students that result from religious observances and to provide without penalty for the rescheduling of examinations and additional required class work that may fall on religious holidays. Unavoidable personal emergencies, including (but not limited to) serious illness; delays in getting to class because of accidents, etc.; deaths and funerals, and hazardous road conditions will be excused.

If you are obtaining financial assistance (TA, STAP, FA, VA, Scholarship, etc.) to pay all or part of your tuition cost, you must follow your funding agency/institution’s policy regarding “I” (Incomplete) grades unless the timeline is longer than what the University policy allows then you must adhere to the University policy. Students who receive Financial Aid must resolve/complete any “I” (Incomplete) grades by the end of the term or he/she may be placed on “financial aid probation.” If the “I” grade is not resolved/completed by the end of the following term, the student’s Financial Aid may be suspended make the student ineligible for further Financial Aid.

Students are responsible for meeting the guidelines of Tuition Assistance and Veterans Assistance. See the education counselor at your local education center for a complete description of your TA or VA requirements.

Academic Integrity and Student Conduct

Academic integrity means honesty and responsibility in scholarship. Academic assignments exist to help students learn; grades exist to show how fully this goal is attained. Therefore all work and all grades should result from the student's own understanding and effort.

Academic misconduct is any act which improperly affects the evaluation of a student’s academic performance or achievement. Misconduct occurs when the student either knows or reasonably should know that the act constitutes misconduct. Academic misconduct includes: cheating and using unauthorized materials on examinations and other assignments; improper collaboration, submitting the same assignment for different classes (self-plagiarism); fabrication, forgery, alteration of documents, lying, etc…in order to obtain an academic advantage; assisting others in academic misconduct; attempting to commit academic misconduct; destruction of property, hacking, etc…; intimidation and interference with integrity process; and plagiarism. All students should review the Student’s Guide to Academic Integrity at http://integrity.ou.edu/students_guide.html

Students and faculty each have responsibility for maintaining an appropriate learning environment. All students should review policies regarding student conduct at http://studentconduct.ou.edu/

Accommodation Statement

The University of Oklahoma is committed to making its activities as accessible as possible. For accommodations on the basis of disability, please contact your local OU Site Director.

Adjustment for Pregnancy/Childbirth-Related Issues

Should you need modifications or adjustments to your course requirements because of documented pregnancy-related or childbirth-related issues, please contact me as soon as possible to discuss. Generally, modifications will be made where medically necessary and similar in scope to accommodations based on temporary disability. Please see http://www.ou.edu/content/eoo/faqs/pregnancy-faqs.html.
Title IX Resources

For any concerns regarding gender-based discrimination, sexual harassment, sexual misconduct, stalking, or intimate partner violence, the University offers a variety of resources, including advocates on-call 24/7, counseling services, mutual no-contact orders, scheduling adjustments, and disciplinary sanctions against the perpetrator. Please contact the Sexual Misconduct Office at smo@ou.edu or (405) 325-2215 (8-5), or the Sexual Assault Response Team at (405) 615 -0013 (24/7) to report an incident. To learn more about Title IX, please visit the Institutional Equity Office’s website at http://www.ou.edu/content/eoo.html

Course Policies

Advanced Programs policy is to order books in paperback if available. Courses, dates, and professors are subject to change. Please check with your OU Site Director. Students should retain a copy of any assignments that are mailed to the professor for the course. Advanced Programs does not provide duplicating services or office supplies.

Any and all course materials, syllabus, lessons, lectures, etc. are the property of professor teaching the course and the Board of Regents of the University of Oklahoma and are protected under applicable copyright.

For more information about Advanced Programs, visit our website at: http://www.goou.ou.edu/
INSTRUCTOR VITA
Zhen Zhu, Ph.D.

Education
1994 Ph.D. in International Economics, Macroeconomics, Econometrics, University of Michigan

Current Positions
Dr. Michael Metzger Endowed Chair, Professor of Economics, University of Central Oklahoma

Frequently Taught Advanced Programs Courses
- Economics 5613 International Economics - Trade
- Economics 5633 International Economics - Finance

Major Areas of Teaching and Research Interest
- International Financial Market
- Energy Markets (especially natural gas markets)

Representative Recent Publications and Presentations
- “Opportunities and Challenges Facing the Chinese Natural Gas Market,” Natural Gas and Electricity, forthcoming.

**Representative Honors and Awards Received**

- Transformative Leaning Scholar, UCO, 2014-2015
- Barnabas Fellow, UCO, 2011-2012
- McGraw-Hill/Irwin Distinguished Paper Award, Southwest Society of Economists, 2006
- Exemplary Service Award, UCO Economics Department, 2004
- Faculty Research Merit Award, UCO, 2003, 2007, 2011
- Distinguished Researcher of the Year, College of Business, UCO, 2002
- Research Fellow, Financial Research Institute, University of Missouri, 2001, 2002
- Hauptman Fellow for Research Excellence, UCO, 2001

**Major Professional Affiliations**

International Association for Energy Economists